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COMMONWEALTH OF PENNSYLVANIA : IN THE COURT OF COMMON PLEAS

VS : OF ERIE COUNTY, PENNSYLVANIA

GREGORY T. DILORETO, JR. : CRIMINAL DIVISION

: NO. 2710 of 2001

COPY

SUMMARY APPEAL

Proceedings held before the Honorable Stephanie Domitrovich, in Courtroom G, Erie County Courthouse, Erie, Pennsylvania, on Thursday, January 31, 2002, commencing at 10:53 a.m.

APPEARANCES:

Matthew DiGiacomo, Assistant District Attorney, appearing on behalf of the Commonwealth.

Craig Markham, Esquire, appearing on behalf of the Defendant.

Sylvia M. Waid, RMR -- Official Court Reporter

P-R-O-C-E-E-D-I-N-G-S

MR. DiGIACOMO: We will proceed with Mr. DiLoreto's case.

THE COURT: Very well. Mr. Markham, your client is pleading not guilty; is that correct?

MR. MARKHAM: That's correct, Your Honor.

THE COURT: Very well. This is a de novo proceeding on a 3361. You may proceed, Commonwealth.

MR. DiGIACOMO: Thank you, Your Honor. This is Docket 2710 of 2001. The Commonwealth would call Officer Karl Kelm to the stand.

THE COURT: Very well.

KARL KELM,

called as a witness, being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. DiGIACOMO:

Q Sir, if you could please state your full name and occupation?

A Karl Kelm, traffic investigator for the City of Erie Police Department.

THE COURT: How many years now?

THE WITNESS: Since 1988 as a traffic investigator.

BY MR. DiGIACOMO:

Q That was my next question. So you've been doing that since '88?

A Correct.

Q Have you been doing only that since 1988?

A Correct.

Q What kind of training have you received in assessing accidents, investigating accidents?

A I've attended the Pennsylvania State Police Training Center in Meadville for on-scene accident investigation and advanced accident investigation.

Q Now, those courses, what do they entail? What did you -- start with the basic, then go to the advanced.

A Well, the basic is arriving at the scene, handling the scene, the evidence, the people involved, gathering evidence that is at the scene such as skid marks, assessing those in relationship to speed and postings.

Q Well, let's stop there real quick. When you're assessing speed based on skid marks, did you learn the proper procedure for determining the speed of a motor vehicle based on the skid marks?

A Correct.

Q And what's the basic premise of that? How is that done?

A Well, you measure the distance of the skid mark which was left by the vehicle, and you find out what the

drag factor is, the amount of pressure exerted through the tires and the type of roadway, and then you apply that information to the formulas that are available for the speed allotted in that area.

Q And you've had training in the determination of speed based on skid marks there then?

A Right, correct.

Q Let's go to the advanced accident course.

A Advanced is basically the same, but then it involves the -- the -- I'm trying to think of the correct word, the elevation or dropping of the roadway, what degree a hill would be in relationship to flat ground.

Q Now, when you are assessing the speed of a motor vehicle, do you take all those factors into consideration?

A The factors, all those are taken into consideration if the accident so determines it.

Q If the same dictates that you take the slope?

A Slope, correct.

Q Okay. Now, when did you have these courses?

A Back in, I would say, the late '80s.

Q Okay. And you successfully completed those courses?

A Correct.

Q Did you receive certificates for that completion?

A Yes, I have.

Q Do you have those with you?

A No, those certificates are on file at the Erie Police Department. I've brought them over numerous times through my testimony here at the courthouse.

MR. DiGIACOMO: Your Honor, in light of the fact that Officer Kelm did not bring those certificates, we would just ask that the Court -- we will offer his -- ask the Court to accept his opinion shortly. We would ask for the opportunity to provide those to the Court and defense counsel later today. I understand Officer Kelm has been accepted by this Court to testify and give his opinion on accident scenes by Your Honor on many, many occasions.

THE COURT: Any objection?

MR. MARKHAM: I have no problem with that, Your Honor.

MR. DiGIACOMO: Thank you, counsel. Thank you, Your Honor.

THE COURT: Very well.

BY MR. DiGIACOMO:

Q Any other training, classroom, formal training on accident scene reconstruction?

A No.

Q Okay. As far as on-the-job training, assessing accident scenes, how many accident scenes since you've started doing investigations since 1988?

A Numerous. Fatalities or serious accidents I've been

called out for, I've done approximately 75 to 80 fatalities, numerous serious accidents, and as my job description with the city I review the daily accidents as they are turned in for approval.

Q The scenes that you've responded to, how many times have you had to make a determination as to the speed of a motor vehicle based on the skid marks that were left?

A I --

Q The best you can estimate.

A I would say probably at least half of them.

Q Okay. Have you had to testify in court before and give your opinion as to the speed of a motor vehicle based on the skid marks and any other evidence left at the scene?

A Correct.

Q And how many times have you done that?

A All I can say is numerous.

MR. DiGIACOMO: Okay. Your Honor, at this time I would ask that Officer Kelm be accepted as an expert as far as accident scenes and that he be entitled to give his opinion as to speed of a motor vehicle based on skid marks, et cetera. If there's no objection or if counsel has any questions to pose?

MR. MARKHAM: I have no questions, Your Honor. I don't object to his qualification as an expert to determine speed from the length of skid marks and that speed

being determined at the moment the skid marks commenced. Other than that, I have no objections to him testifying as an expert on that point. I think his testimony has established that he's able to make those calculations based on the length of skid marks as opposed to other factors that determine speed.

THE COURT: Is that acceptable?

MR. DiGIACOMO: Yes.

THE COURT: Very well. So qualified.

MR. DiGIACOMO: Thank you, Your Honor.

BY MR. DiGIACOMO:

Q All right. Officer Kelm, you're here -- you know you're here to testify in the matter of Commonwealth versus Mr. DiLoreto, correct?

A Correct.

Q And you were -- you responded to a scene involving an accident where Mr. DiLoreto was driving one of the vehicles, correct?

A Correct.

Q Do you recall when that was?

A Yes, that was on April 13th, year 2001.

Q And the vehicle Mr. DiLoreto was driving at the time was?

A A City of Erie police cruiser.

Q Marked?

A It was properly marked with all the proper markings.

Q And he -- and to your understanding, Mr. DiLoreto was on duty at that time?

A Correct, he was.

Q Okay. Are you familiar with the circumstances that were happening prior to Mr. DiLoreto becoming involved in the accident?

A Yes, I was.

Q If you could explain to the Court what you're aware of?

A Okay. Through my investigation it was determined that Officer DiLoreto was finishing up responding to an alarm call at the Maennerchor Club. He was in that general area while a fight call was given out at the New York Lunch at 10th and Parade. The unit sent to the call was already on scene and was taking control of the situation. Officer DiLoreto related to me that he proceeded toward the area. He was going --

THE COURT: What area? 10th and Parade?

THE WITNESS: 10th and Parade, yes.

THE COURT: Okay.

A He went east on East 16th Street to Parade and then south on Parade -- or excuse me, north on Parade. He was not -- he stated that he was not in a hurry because of the fact that the other unit was there and had things under

control, but he was going as a backup unit in case the situation deemed necessary. He related that he was -- he was not traveling at any great speed. He said if he had to guess, it was 35 to 40 miles an hour.

Just to make yourself aware of the street in that area, Judge, Parade Street is north and south. It's a four-lane highway, two lanes of traffic in each direction. As you're proceeding north from 16th Street you go into a dip area because of the railroad tracks are on a bridge above you, so you're going down a slope, across -- or underneath the bridge, and then you come up another slope before you start to flatten out to proceed north. With the railroad tracks and the slope both descending and ascending, your line of vision is hampered for a clear view for any great distance.

As he started to crest the far slope, he observed traffic lights in his -- on his side of the roadway. He related that, you know, they didn't belong there, he didn't know what was happening, the lights continued to come and then start to come in more so into his lanes of traffic. He hit his brakes and started to swerve to the right. In doing so he left approximately 70 feet of skid marks before impact. He impacted the S-10 Chevy pickup truck.

After the initial impact with the pickup truck he had secondary impact with that same vehicle, traveled

approximately 20-some feet, had a major impact with a telephone pole, came off that telephone pole, bearing in mind that the first and initial contact with the pickup truck they were both going somewhat in the same direction, in a northeasterly diagonal motion. From the impact with the pickup -- or from the impact with the telephone pole his vehicle then started to -- the rear end started to twist clockwise and ended up setting on the bed -- rear portion of the bed tailgate area of the pickup truck, and then they slid another 30 -- approximately 30 feet to a final rest.

Through my training, I'm not a reconstructionist and it's limited, the only thing that I am able to work with is the initial skid leading up to the first impact, nothing from there on. As a result of the skid mark that is what I based my driving at unsafe speed on, and then my numerous investigations into accidents, seeing the devastation of the accident, the continuation into another object and creating -- or resulting in additional major damage, and then traveling on before coming to a final rest.

Q Officer, what was the -- first, what was the total distance from where the skid marks started to where Mr. DiLoreto's vehicle came to a final stop?

A Roughly, let's see, 70 and 20 is 90, I think it was about 120-some odd feet with two major impacts in between.

Q And from the point of the skid marks, the first

point of impact you said that was 70 feet?
A Correct.
Q 70 feet of skid marks?
A Correct.
Q Were you able to make a determination as to the speed that Mr. DiLoreto's cruiser was traveling at that time?
A We have him at 38 miles an hour based on just that skid.
Q Okay. And the time of day?
A Well, excuse me, let me clarify that.
Q Go ahead.
A To clarify that speed, that -- that is not the speed that he would have been traveling through this whole series. That speed is only based on the skid. Like I said, I'm not a reconstructionist and I can't go into the additional part of it, but there are formulas that I can apply. There's a formula that I can apply that will show that if a vehicle is traveling down the roadway and applies his brakes, he leaves X amount of feet of skid mark. Taking that number of feet of skid mark along with the drag factor and implementing it into a formula will show you the speed that it took that vehicle from the start of the skid to the end of the skid. So based on just my expert opinion in regards to and my working knowledge of this, the speed is only limited to that

70 foot skid mark.

Q So you're saying that he was traveling at 38 miles per hour through that skid?

A No, based on just that skid mark.

Q Okay, okay.

A His speed I -- I believe to be greater than that, but I am not a reconstructionist and cannot pursue that further.

Q Okay. So just to be clear, the 38 is at the point in time when he starts -- where the skid marks start?

A If I was going down the road and I left 70 feet of skid mark, based on it being in a 25 miles an hour speed zone, I would leave 70 feet of skid mark from start to stop.

Q At what speed?

A At 38 miles an hour.

Q Okay. And you said --

A That would be coming to a stop.

Q Okay. And you said the zone where he was traveling was 25 --

A Correct.

Q -- miles per hour? Now, the time of day. What time of day was this?

A It was 2:37 in the morning.

Q Okay. Do you have any indication of whether Mr. DiLoreto had his overhead lights on?

A There was no emergency equipment being activated.
Q Okay. And you have that based on his statement by Mr. DiLoreto?
A Correct.
Q So there was no siren and no takedown lights, just the normal --
A No, no lights, correct.
Q And you also said that when you come -- how far out of the dip under the tracks did the skid marks start? Did you determine that?
A Once you come out of the dip, where they started in relationship to that dip?
Q Yes.
A No.
Q But you did testify that coming out of that dip the view north is not a clear view?
A No, it's not a clear view, no.
Q And what -- and the cause for that obstruction?
A Because you're -- you're dipping down below the -- the normal grade the roadway is set on because of your going underneath a railroad bridge and the road dips down there for you to pass through.
Q Now, where this impact was made, was it made in an intersection?
A Yes, it was made in the -- in the intersection.

It's an offset intersection of East 14th and Parade, and it occurred in the northbound lanes of traffic.

Q Were you able to make a determination why the other vehicle was where it was?

A Through my investigation it was learned that the driver of the other vehicle was in the lower Parade Street area moving, but she was proceeding south on Parade to go east on 14th Street to visit a friend.

Q And that was the intersection where the impact was?

A Correct. She would have made the -- the left-hand turn off of Parade onto 14th Street to visit her friend's house, because 14th Street is a one-way street heading east.

Q Okay.

A Which she was, we believe, to be doing.

Q And the point of impact, which northbound -- you said that it's four lanes. Which northbound lane was the impact?

A It would be -- it was in the right-hand lane of the northbound lane -- of the two northbound lanes.

Q So it would have been in the lane closest to 14th Street?

A Correct, closest to the east side of the roadway.

Q Which you indicated the vehicle being close to completing its turn?

A Halfway through.

Q At what part of the victim's vehicle was the initial point of contact with the cruiser?
A The passenger side front fender tire area.
Q Fender tire area, okay. Officer Kelm, based on your investigation -- before I finish. The driver of the other vehicle, what -- what happened with that driver?
A At impact?
Q No, as a result of the accident.
A As a result? As a result, the driver of that vehicle, last talking with the parties involved with that individual --
Q Well, at the scene. At the scene.
A Oh, at the scene?
Q Yes. Where did that person end up?
A At the scene as a result of the impact that individual was ejected from her vehicle and ended up approximately 30 to 35 feet north of the final resting spot of the vehicles. Or for a better picture for the judge, approximately 60 to 70 feet north of the northeast corner of 14th and Parade. She did not have a seat belt on and was ejected through the window.
Q Okay. And was there anyone in her vehicle?
A She was by herself.
Q Was there anybody in Mr. DiLoreto's vehicle with him?

A He was by himself.

Q To your knowledge, is the victim in this case, the driver of the other vehicle, capable of testifying?

A No, she is not.

Q Okay. Now, is there anything else, Officer Kelm, based on your investigation of the scene, any of your training, is there anything else that you based your decision to charge driving a vehicle at safe speed? Is there anything else you can add for the Court?

A No.

MR. DiGIACOMO: Okay. That's all the questions I have.

THE COURT: Cross?

MR. MARKHAM: Thank you, Your Honor. Your Honor, if I may, I just have a brief trial memo that I think will highlight some of the legal issues that we'll have to deal with today.

THE COURT: Thank you.

CROSS EXAMINATION

BY MR. MARKHAM:

Q Officer Kelm, I have --

MR. DiGIACOMO: If I need to get up, I will, counsel.

MR. MARKHAM: Thank you.

Q I have a map that I think shows us the area where

this accident occurred, correct?
A Yes.
Q Okay. The accident happened up here at the intersection of East 14th and Parade?
A Correct.
Q And we see down here these markings, this would be where the overpass is?
A Yes, that's where the dip is where the cruiser would have went underneath the railroad tracks to come on up and out.
Q Officer DiLoreto's vehicle would have been traveling north, went under the overpass and proceeded to where the point of collision was?
A Right.
Q Okay. And he would have to pass East 15th and the west portion of East 14th, which is kind of an offset from the east portion of East 14th?
A Correct.
Q Okay. Now, the -- the distance between the overpass and the point of impact, by measuring it on this map it's about 300 feet. Would that be consistent with your --
A I could take a guess and just from my knowledge of the area say that's probably pretty close.
Q Okay. Now, you estimated Officer DiLoreto's speed based upon the distance of his skid marks which you told us

were about 70 feet?
A Correct.
Q And it's at that point when those skids first started that you are able to say he was traveling at least 38 miles an hour?
A No.
Q Probably more, you think?
A Correct.
Q All right. Now, you can't tell us by your formula what speed he was traveling 100 feet further south, can you?
A No.
Q And you can't tell us by your formula how fast he was traveling when he went under the overpass, can you?
A No.
Q Now, the overpass dip that you're talking about momentarily obstructs northbound traffic -- the vision of northbound traffic of the area where the accident happened, correct?
A Correct.
Q But he certainly would have came to the crest of that overpass or underpass before he even reached East 15th Street, correct?
A In that general area.
Q Okay.
A Yeah.

Q From that point on he would be able to see or have an unobstructed view of the point of where the collision occurred?
A He would have a lot better view, yes.
Q Okay. I mean, he could see that area?
A Yes, I would believe so, yes.
Q Now, this happened in the early morning hours, correct?
A Correct.
Q And he had his headlights illuminated?
A Correct.
Q The driver of the other vehicle, Mrs. George, is that her name?
A Yes.
Q She had her headlights illuminated also?
A Correct.
Q Okay. There's nothing obstructing her view of Officer DiLoreto's approaching vehicle, was there?
A No.
Q Okay. And the ground -- once you come up the overpass heading north, the ground on -- well, the street of Parade Street in this area is pretty much level; is that correct?
A Correct.
Q Now, the weather was good, correct?

A Yes.
Q Roadways were dry?
A Correct.
Q There were no other vehicles in this vicinity that your investigation has revealed, correct?
A No.
Q And it was very early in the morning the time the accident occurred, correct?
A Correct.
Q Officer DiLoreto -- well, let me back up a second. This intersection where the accident occurred is controlled by a traffic signal, correct?
A Yes.
Q A light, a traffic light?
A Traffic light, yes.
Q Officer DiLoreto had the green light, didn't he?
A Correct.
Q And he would have had the right-of-way of going through this intersection?
A Correct.
Q And your investigation determined that Mrs. George did not have her turn signal on, correct?
A Correct.
Q But she did initiate the left-hand turn, correct?
A Correct.

Q And she initiated that turn approximately 70 feet from where Officer DiLoreto's vehicle was at that time, because that's when he applied the brakes?

A Yes, if I follow you, yes.

Q And your investigation hasn't revealed any reason why Officer DiLoreto would have anticipated or thought that she was going to turn in front of him when he was within 70 feet of her?

A No, I -- he -- he originally saw the lights on his side of the roadway, didn't understand what they were doing there, and then when he realized that they weren't moving and they were continuing on he hit his brakes and moved to his right.

Q Now, Officer DiLoreto was charged for driving at unsafe speed given the conditions and hazards then existing, correct?

A Correct.

Q And the hazard that ultimately led to this collision was Mrs. -- Ms. George turning left at this intersection, correct?

A Well, that was the result, but --

Q I mean that was the hazard that caused the accident?

A Yes, but there are other factors there.

Q Are you talking about his speed?

A That would -- that -- that initiated they're coming

out of a dip, you're on a roadway, you're passing through the intersections, you don't have an absolute clear view until 70 feet before impact.

Q Well, let me go back then, because I may have misunderstood what you said before. I talked about the dip. You don't know what speed he was traveling when he went through the dip?

A No.

Q He came up to the dip about -- he had a 300 foot sight vision coming up from the dip to where the accident occurred, correct?

A Correct.

Q Nothing obstructing his view?

A No.

Q Nothing obstructing her view?

A No.

Q No other cars in the vicinity except for Ms. George?

A Correct.

Q He gets within 70 feet, applies his brakes as she's making this left-hand turn?

A Correct.

Q Now, you through your investigation concluded that her left turn was improper?

A Correct.

Q You also found that she was drunk?

A Correct.

THE COURT: What do you mean by drunk?

BY MR. MARKHAM:

Q Well, was a blood alcohol test done on Ms. George?

A Yes.

Q Was she over the legal limit?

A Yes, she was.

Q How far over the limit was she?

A 1.6 -- or excuse me, .16.

MR. MARKHAM: Just let me check my notes, Your Honor. That may be all my questions. That's all the questions I have.

THE COURT: Very well.

MR. DiGIACOMO: Just a couple brief questions on redirect, Your Honor.

REDIRECT EXAMINATION

BY MR. DiGIACOMO:

Q Officer Kelm, just to be clear, your testimony on direct and cross you said Mr. DiLoreto saw the other vehicle in his lane --

A Correct.

Q -- continue traveling?

A Yes.

Q And then it was only after the vehicle stayed in that lane Mr. DiLoreto said he applied his brakes?

A Yes, after he -- he saw the headlights in his lane of traffic, wondered what they were doing there, and then when they continued and started to make the turn he then hit his brakes and swerved to the right.

Q And that's the way the --

A Skid marks are applied.

Q And if he is going to his right and the other vehicle is going to its left --

A Yes.

Q -- they're going towards --

A Basically the same area.

Q They're going towards the same point?

A Correct.

Q Okay. So there was viewing the vehicle, continued, continued to view the vehicle, and then hit the brakes?

A Correct.

Q This wasn't a saw the vehicle in my lane, applied the brakes 70 feet away?

A No.

MR. DiGIACOMO: Thank you. That's all I have.

MR. MARKHAM: A couple follow-ups, if I may, Judge?

THE COURT: Sure.

RECROSS EXAMINATION

BY MR. MARKHAM:

Q From the physical evidence you saw at the accident scene, did it -- did you conclude that Ms. George actually made the turn from her lane of traffic?

A No, I was not able to determine that she made the turn from her lane of traffic. She was attempting to make a left-hand turn.

Q Okay. And the point of impact on her vehicle was on the passenger side?

A Correct.

Q And what part of the passenger side?

A I believe it's the front fender and tire area there.

Q Okay.

A I believe it's front end.

Q And the point of impact with regard to the roadway was in the northbound lane closest to the curb?

A Correct.

Q Okay. So if Officer DiLoreto saw her in his lane before the turn, she would have been somewhere north of the intersection then, is that what you're saying?

A I believe so, yes.

Q Okay. Do you know her speed of -- her -- the speed of her vehicle when she made that turn?

A No, no, there was no evidence of her vehicle of any braking applied beforehand.

Q Okay. And other than her level of intoxication, you

don't know why she made the turn in front of him?

A Only that through my investigation it was learned that she was going to East 14th Street to visit a friend.

Q We know where she was going, but why she turned in front of the officer you don't know?

A No, no.

MR. MARKHAM: That's all I have, Judge.

MR. DiGIACOMO: I have no further questions.

THE COURT: I would like to know how you came up with the 38 miles per hour. You can read it into the record.

THE WITNESS: Okay. The speed limit is posted at 25. The formula to find the speed is the square root of 30, which is a common factor, times the drag factor times the skid. The drag factor was tested to be at .70.

THE COURT: How did you determine the drag factor?

THE WITNESS: With a test, a skid -- a -- a test sled.

THE COURT: That you had at the accident scene?

THE WITNESS: Yes, yes.

THE COURT: .70, you said?

THE WITNESS: Correct.

THE COURT: And how do you test -- tell me the

mechanics of this.

THE WITNESS: Okay. So anyway, you -- you put those three figures into the formula and you multiply the 30, which is a common denominator, times the .70, which is the drag factor. Then I took the -- the least or the shortest skid left by the front tires, the shortest skid is 69, the longest one is 72. I took the 69 and applied that to the formula. You come out with 1,449. You square that and it comes out to 38.06 miles per hour.

THE COURT: Where did you come up with this formula again?

THE WITNESS: That is the formula that is given out through training at the on-scene accident investigation at the Pennsylvania State Police Training Center in Meadville.

THE COURT: And how do you know that these are the skid marks from this vehicle?

THE WITNESS: They were freshly on the scene, led right on up to the impact, and continued in a broken manner up to the telephone pole and then in another broken manner up to the final rest.

THE COURT: Anything further?

MR. MARKHAM: One.

FURTHER RECROSS EXAMINATION

BY MR. MARKHAM:

Q Officer, do you know whether or not this stretch of Parade Street is properly posted with the speed signs?

A It's properly posted southbound 25 miles an hour. It was improperly posted northbound 25 miles per hour.

Q And Officer DiLoreto was heading northbound?

A Correct.

MR. MARKHAM: Thank you.

THE COURT: And the officer was not under the influence of any alcohol?

THE WITNESS: None.

THE COURT: Okay. Very well. Thank you. Next witness?

MR. DiGIACOMO: Nothing further, Your Honor.

THE COURT: You're resting?

MR. DiGIACOMO: Yes.

THE COURT: Very well.

MR. MARKHAM: We will not call any witnesses, Your Honor. We rest also.

THE COURT: Very well. And you submitted a memorandum. Do you want an opportunity to submit one?

MR. DiGIACOMO: I would ask for an opportunity, Your Honor, to submit a response.

THE COURT: How long?

MR. DiGIACOMO: The Commonwealth would ask till Monday, Monday would be fine, if that's acceptable to

the Court and counsel.

THE COURT: Sure, sure. No problem?

MR. MARKHAM: No.

THE COURT: Very well. The Court will reserve and allow you until -- give you until Tuesday. Okay?

MR. DiGIACOMO: Thank you, Your Honor.

THE COURT: To file it. Very well. And counsel for the defendant, if you want to file something additionally, you can do so too by Tuesday.

MR. MARKHAM: Thank you, Your Honor.

THE COURT: Very well.

(Proceedings concluded at 11:30 a.m.)

C E R T I F I C A T I O N

I hereby certify that the proceedings and evidence are contained fully and accurately in the notes taken by me on the trial of the above cause and that this copy is a correct transcript of the same.

Sylvia M. Waid, RMR
Official Court Reporter

Date: **February 7, 2002**

The foregoing record of the proceedings upon the trial of the above cause is hereby approved and directed to be filed.

Honorable Stephanie Domitrovich

I

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF PENNSYLVANIA

JENNIFER RAE GEORGE An Incapacitated Person, by RAYMOND G. GEORGE and SUSAN M. GEORGE, Guardians, Plaintiffs	)	
v.	)	No. CA 04-77E
CITY OF ERIE, JOYCE SAVACCHIO, PAUL DEDIONISIO, RICHARD SZYCHOWSKI, DAVID VAN BUSKIRK, RICHARD CRAWFORD, PATRICK DURKIN, GREGORY T. DILORETO and JOHN DOE, Defendants	)	TRIAL BY JURY OF TWELVE (12) JURORS DEMANDED

AFFIDAVIT OF JAMES D. MADDEN, P.E.

I, James D. Madden, P.E., having been duly sworn, depose and state as follows:

1. I am a licensed Professional Engineer with over 30 years engineering experience.

2. I have worked in the forensic aspects of engineering for the last 20 years, including the analysis and reporting of circumstances surrounding traffic accidents and mechanical accidents. This work has included conducting inspections, analyzing accidents and safety issues, preparing affidavits and reports, and providing testimony in depositions, arbitrations and trials in state and federal courts.

3. A more detailed description of my qualifications is set forth accurately in the Summary Curriculum Vitae attached hereto as Exhibit One and made a part hereof.

4. If called to testify in this matter, I will express, to a reasonable degree of professional engineering certainty, the opinions contained in my report dated August 9, 2002. A true and correct copy of the aforementioned report is attached hereto as Exhibit Two and made a part hereof.

IN WITNESS WHEREOF, I have set my hand and seal this 15th day of July, 2005.

James D. Madden, P.E.

STATE OF OHIO
JAMES D. MADDEN E-49787 REGISTERED PROFESSIONAL ENGINEER

STATE OF OHIO :
COUNTY OF CUYAHOGA :

Sworn to and subscribed before me this 15th day of July, 2005.

Notary Public

NOTARIAL SEAL STATE OF OHIO

CHRISTINA M. KOPROWSKI
NOTARY PUBLIC
STATE OF OHIO
Recorded in
Cuyahoga Cty.
My Comm. Exp. 2/10/09

JAMES D. MADDEN P.E.
ACCIDENT INVESTIGATION AND RECONSTRUCTION AND SAFETY ANALYSIS
DEERVIEW BUILDING
10175 BRECKSVILLE ROAD, CLEVELAND, OHIO 44141
PHONE (440) 838-1191 • FAX (440) 838-1192

Summary Curriculum Vitae

PRIMARY AREAS OF PRACTICE

The Practice consists of Investigation, Analysis and Reconstruction of Mechanical Accidents, including Traffic Accidents and other Mechanical Accidents, with or without a Chemical Component; and Safety Analysis of Equipment and Facilities associated with these accidents, including the use of Human Factors when appropriate. This practice includes: traffic accidents, including roadway design, roadway condition and traffic control devices; consumer product and industrial equipment design and warnings; chemical and gas accidents; fires, explosions and hazardous combustion; commercial and industrial facility design and operation; and building and property safety. Typical services include on-site investigation and data collection; preliminary evaluation; calculations; testing; research; accident analysis; equipment and facilities analysis; and accident reconstruction; verbal and written reports; and, expert testimony in depositions, arbitrations and trials.

LICENSING & CERTIFICATION

Licensed as a Professional Engineer: certification earned by taking the National Council of Engineering Examiners' (NCEE) examination in Fundamentals of Engineering, and the MECHANICAL ENGINEERING and CHEMICAL ENGINEERING sections of the National Council of Engineering Examiners' examination in Principles and Practices of Engineering. Registered under Ohio Certificate Number E-49787. Certified as a Diplomate Forensic Engineer in accordance with the standards of the Council of Engineering Specialty Boards (CESB). Senior Member No. 476 in the National Academy of Forensic Engineers.

CURRENT MEMBERSHIP IN PROFESSIONAL SOCIETIES

Society of Automotive Engineers (SAE)
National Fire Protection Association (NFPA)
American Institute of Chemical Engineers (AIChE)
American Society of Mechanical Engineers (ASME)
American Society of Agricultural Engineers (ASAE)
Building Officials & Code Administrators International (BOCA)
National Society of Professional Engineers (NSPE)
National Academy of Forensic Engineers (NAFE)
Institute of Transportation Engineers (ITE)

RECOGNITION & LISTINGS

Sigma Pi Sigma National Physics Scholastic Honor Society
Tau Beta Pi National Engineering Scholastic Honor Society
Sigma Xi National Research Honor Society
National Science Foundation Undergraduate Research Grant
NASA Fellowship for Graduate Study
Listed in Marquis' Who's Who in Science and Engineering and
the American Association of Engineering Societies' Who's Who in Engineering

TECHNICAL EDUCATION

1963, 1966: Earned a Bachelor of Science in Chemical Engineering degree and a Master of Engineering degree from the University of South Carolina, Columbia, South Carolina. Degree work included substantial coursework in mathematics, physics, chemistry, engineering mechanics, and psychology, in addition to coursework in engineering principles, processes and equipment.

1970 to 1978: Attended short courses, including the American Institute of Chemical Engineers (AIChE) seminars on prevention of fires and explosions and protection against overpressure failures, and the AIChE continuing education course on Fire and Explosion Hazards Evaluation.

1983, 1986 Earned Certificates of Successful Completion from the Northwestern University Traffic Institute, Evanston, Illinois, for 8 weeks of coursework in traffic accident investigation and reconstruction, including the following courses: (1) Technical Accident Investigation; (2) Vehicle Dynamics; (3) Traffic Accident Reconstruction; (4) Continued Case Studies in Traffic Accident Reconstruction; (5) Microcomputer-Assisted Traffic Accident Reconstruction; (6) Motorcycle Accident Reconstruction; and, (7) Vehicle Lamp Examination.

1985 to 1987: Earned college credits through the Mechanical Engineering Department at Cleveland State University Cleveland, Ohio, for coursework in engineering mechanics, including statics, dynamics, and kinematics: and, materials and metallurgy.

1986 to 1988: Attended the Society of Automotive Engineers (SAE) course on product liability and SAE seminars on traffic accident investigation and reconstruction.

PROFESSIONAL EXPERIENCE:

1963 through 1983 RESEARCH, OPERATIONS AND ENGINEERING DESIGN

Performed research for the National Science Foundation and the Atomic Energy Commission. Employed by chemical companies in chemical and plastics plant research, manufacturing, and engineering design. Employed by engineering design and construction companies in engineering design, consulting, and construction assistance for facilities for: plastics, pharmaceuticals and chemicals manufacturing; natural gas processing; petroleum refining; utilities production and distribution; industrial waste handling and treatment; and safety.

RESEARCH AND TESTING:

Conducted experiments with chemicals and machinery and other equipment, in laboratories and manufacturing facilities.

GENERAL ENGINEERING DESIGN OF EQUIPMENT AND FACILITIES:

Performed and supervised the design engineering and specification of machinery, vessels, piping, valving, instrumentation, and other equipment and facilities. These items and facilities were associated with the manufacture of plastics, pharmaceuticals and chemicals; the production and pipeline transportation of natural gas; the separation of natural gas fractions; refining of petroleum; gas and hydrocarbon liquids processing; solids (plastics, etc.) handling - mechanically and pneumatically; and, utilities (steam, water, air, nitrogen, etc.) production and distribution.
[see next section for safety and environmental design]

PROFESSIONAL EXPERIENCE (continued):

1963 through 1983 RESEARCH, OPERATIONS AND ENGINEERING DESIGN (continued)

SAFETY AND ENVIRONMENTAL ENGINEERING DESIGN OF EQUIPMENT AND FACILITIES:

Performed and supervised general safety design integral to equipment and manufacturing facilities design. Such design included the elimination of hazards and the addition of guards to prevent contact with hazards. This design was an integral part of the equipment and facilities design. Also performed and supervised specific safety design to provide separate safety facilities for the protection of property and personnel. Such facilities provided protection from equipment and machinery hazards and failures; fires and explosions; vessel and piping overpressure and failures; and, hazardous gas, liquid and solid discharges to the atmosphere. These facilities included fire suppression systems; ground flares and elevated flare stacks for burning hazardous materials; and, equipment and systems for overpressure relief of gases and liquids. Also performed and supervised design of facilities to protect the environment. These facilities included: gas vent stacks; spill-containment and drainage facilities; and, solid and liquid waste handling and disposal facilities.

MANUFACTURING OPERATIONS AND CONSTRUCTION:

Participated in the startup and technical improvement of manufacturing facilities. Provided technical assistance during construction and designed revisions of manufacturing and related facilities as construction proceeded.

SUPERVISION, MANAGEMENT AND CONDUCT OF TRAINING:

Supervised and managed other engineers and support personnel in process systems engineering, equipment engineering, safety engineering design, and project engineering of manufacturing facilities. Functions included review and approval of the quality of designed facilities, especially the safety aspects of the design, and classroom and hands-on training of engineers in design, particularly in safety design and safety systems and the use of Codes. Also supervised and managed engineers writing Design Manuals for Piping, Valving, Instrumentation, Equipment and Boiler system design.

For additional information regarding Engineering Design see "Examples of Equipment, Systems and Facilities Designed and Specified" in this Curriculum Vitae.

1983 through the present: ACCIDENT INVESTIGATION AND RECONSTRUCTION AND SAFETY ANALYSIS:

Have performed and currently perform accident investigation and reconstruction and safety analysis in the areas noted in the Primary Areas of Practice on page 1. Expert testimony has been provided in depositions, arbitrations and trials. Matters have been handled for both plaintiffs and defendants through attorneys, insurance companies and claims services.

For additional information regarding Accident Investigation and Reconstruction and Safety Analysis, see "Examples of Accidents Handled in Forensic Practice..." in this Curriculum Vitae.

1963 through the present: USE OF CODES, STANDARDS AND RECOMMENDED PRACTICES:

Have used industry, technical society and government codes, standards and recommended practices extensively during the foregoing activities; and continue to use codes, standards and recommended practices in current work.

EXAMPLES OF EQUIPMENT, SYSTEMS AND FACILITIES DESIGNED AND SPECIFIED:

EXAMPLES OF TYPES OF FACILITIES DESIGNED AND SPECIFIED:

- Facilities involved in: the manufacture and processing of plastics and other solids; the manufacture of pharmaceuticals and chemicals; the production and pipeline transportation of natural gas; the separation of natural gas fractions; the refining of petroleum; and, the processing of gas and hydrocarbon liquids.
- Facilities for production and distribution of steam, water, plant and instrument air, nitrogen, and other utilities.
- Tankage facilities for the storage of liquids and gases; including loading, unloading and refrigeration facilities.
- Bins for storage of solids; including loading, unloading and pneumatic and conveyor transfer facilities.
- Safety and environmental facilities for manufacturing, transportation and storage facilities.

EXAMPLES OF GENERAL EQUIPMENT, SYSTEMS AND FACILITIES DESIGN:

- Equipment and facility instrumentation and control systems, including: automatic and manual; local and remote; systems using air (pneumatic), liquid (usually petroleum based hydraulic fluid) and electrical signal transmission.
- Extrusion and compounding systems for plastics, including: compounders, extruders, choppers, etc.
- Blowers, fans, ejectors, and centrifugal, reciprocating and screw compressors for gases.
- Centrifugal and positive displacement (screw, plunger, etc.) pumps for liquids, including sump pumps.
- Vacuum pumps for gases, to create and maintain a vacuum; filters, separators, bag houses, etc., for solids.
- Steam driven, gas-expansion, electrical and fueled turbines, motors, and engines to drive machinery.
- Furnaces and boilers, for liquids and gases, including safety systems, control systems and fuel systems.
- Heaters and heat exchangers for liquids and gases; dryers and dehumidifiers for solids.
- Refrigeration systems, including machinery, safety systems and control systems; pneumatic conveying systems.
- Pressure and vacuum vessels for liquids and gases; storage tanks for liquids; storage bins for solids.
- Distillation, absorption and solvent extraction columns; traveling cranes; winches; mechanical conveyors.
- Piping and tubing: ranging between the sizes of approximately 1/4 inch to 48 inches.
- Valves: ranging between the sizes of approximately 1/4 inch to 48 inches; including: hand-controlled, remote-controlled; gate valves, globe valves, ball valves, needle valves, butterfly valves, rotary valves, and other specialized valves.
- Signage, including warning signs; emergency annunciator (alarm) panels; control system panel layouts.
- Equipment layouts; building and structure specifications; materials of construction for piping, equipment, etc.

EXAMPLES OF SPECIAL SAFETY AND ENVIRONMENTAL PROTECTION DESIGNS, AND SPECIAL PROJECTS:

- Overpressure and hazardous chemical (liquid and gas) relief systems, including piping and controls.
- Safety relief valves and rupture discs to prevent overpressure in equipment (liquid and gas).
- Ground and elevated flares for burning hazardous liquids and gases; vent stacks for disposal of non-hazardous gases.
- Fire suppression systems, with water, foam and/or inert gas, for use in enclosed places and outdoors.
- Surface drainage and spill containment systems; subsurface open trench/flume systems; gravity and pressure closed sewer systems; liquid and solid waste collection, separation and disposal facilities.
- Testing equipment in manufacturing operations; performing manufacturing and drainage studies to develop design data.
- Assisting with construction of manufacturing facilities, including providing on-site design and other technical assistance.
- Participating in startup and commissioning of manufacturing facilities.
- Designing and presenting courses in safety design to engineers involved in design of manufacturing facilities.
- Managing, supervising and providing technical approval of preparation of Design Manuals for equipment, machinery, piping, valving and instrumentation and Boiler system design for engineers designing manufacturing facilities.

EXAMPLES OF ACCIDENTS HANDLED IN FORENSIC PRACTICE AND FACILITIES AND EQUIPMENT ASSOCIATED WITH THESE ACCIDENTS

FACILITY AND EQUIPMENT ANALYSES - All work included, where appropriate, determining whether a facility or equipment item: was hazardous; was defective in design, manufacture, and/or warnings, and/or were appropriately guarded; conformed with appropriate engineering practices, codes, standards and regulations; and, caused or contributed to the accident.

CONSUMER, RESIDENTIAL AND RECREATIONAL PRODUCTS - Examples of items which had appropriate aspects analyzed (often the same aspects) include: maintenance equipment (walk-behind and riding lawnmowers, snowblowers, trimmers, ladders, etc.); children's products (strollers, highchairs, etc.); recreational equipment (swimming pools and decks, grills, exercise and playground equipment, bicycles, etc.); motor vehicles (automobiles, motorcycles, trucks, etc.); household and utility items (chairs, space heaters, furnaces, etc.).

INDUSTRIAL, COMMERCIAL, CONSTRUCTION, MINING, AND FARM AND GARDEN EQUIPMENT - Examples of items which had appropriate aspects analyzed (often the same aspects) include: equipment for use by the public (coffeemakers, vending machines, display stands, car washes, etc.); construction and heavy maintenance equipment (scaffolding, hand tools, front end loaders, excavators, etc.); commercial and light maintenance equipment (clothes cleaning and pressing equipment, food preparation equipment, etc.); farm and garden equipment (tractors, harvesters, trimmers, lawnmowers, etc.); and industrial equipment (forklifts, presses, conveyors, heating equipment, woodworking machinery, plastics and rubber processing equipment, including blow-molders and calanders, etc).

BUILDING AND PROPERTY FEATURES - Examples of facilities which had appropriate aspects analyzed (often the same aspects) include: single-family and multiple-family residences; retail stores; warehouses; manufacturing facilities; auditoriums; restaurants and lounges; outdoor facilities. Examples of features analyzed include: glass panels, doors and windows; steps, stairs and ramps, and their handrails and guardrails; balconies; floors; roofs; sidewalks, shopping area walks, parking lots, and other exterior walking surfaces.

SPECIAL RESIDENTIAL HEATING AND INCINERATION PROBLEMS (MALFUNCTIONING FIRED EQUIPMENT) - Examples of systems which had appropriate aspects analyzed (often the same aspects) include: gas-fired trash incinerators involved in explosions and fires; equipment and systems involved in carbon monoxide poisonings and deaths, including space heaters, gas-fired furnaces, wood-burning furnaces and heat circulation systems.

FIRE AND EXPLOSIONS - Examples of facilities and items which had appropriate aspects analyzed (often the same aspects) include: residential and recreational facilities and items (single-family and multiple-family residences, motorhomes, motorboats, incinerators, heaters, furnaces, etc.); industrial and commercial facilities (gas pipeline, hydrogen tankers and loading facilities, gasoline service stations, marinas, commercial laundry, scrap and metal processing facilities, various other industrial facilities, etc.). Examples of special issues addressed include whether or not: ventilation, drainage and sewers were safe and properly used; equipment was properly installed and used; and, safety control instrumentation and safety procedures and equipment had been in place and were properly used.

INDUSTRIAL AND COMMERCIAL FACILITIES AND CONSTRUCTION SITES - Examples of additional accidents which had appropriate aspects analyzed (often the same aspects) include accidents involving: exposure to harmful vapors; physical asphyxiation; chemical burns; runaway chemical reactions; falls from scaffolding, through floors, into flumes; tank explosions. Such accidents and other accidents analyzed occurred in steel mills; metal, wood , rubber and plastic product factories; chemical plants; warehouses; construction sites; etc. Examples of specific issues addressed include: design pressure; safety design and procedures for plant operations; ventilation, drainage and sewer design and operation; design for flammable atmospheres; applicability and compliance with: OSHA Regulations; Specific Safety Requirements; industry, technical organization and other governmental codes, standards and recommended practices.

EXAMPLES OF ACCIDENTS HANDLED IN FORENSIC PRACTICE AND FACILITIES AND EQUIPMENT ASSOCIATED WITH THESE ACCIDENTS (continued)

TRAFFIC ACCIDENTS, INCLUDING TRAFFIC CONTROL DEVICES AND ROADWAY DESIGN

EXAMPLES OF TYPES OF TRAFFIC ACCIDENTS HANDLED:

- Single vehicle accidents, on-roadway and off-roadway: including yaws and other slides, rollovers with travel off the ground, launches off embankments, and collisions with off-roadway objects (trees, guardrails, etc.).
- Two vehicle collisions, at all angles: head-on, rear-end, sideswipe, 90 degrees (intersection) and at odd angles.
- Accidents involving 3 or more vehicles: simultaneous collisions, chain collisions, and both types combined.
- Accidents between motor vehicles and pedestrians or bicycles or motorcycles (and similar 2 wheel vehicles).
- Accidents at railroad grade crossings between railroad trains and motor vehicles or bicycles.

EXAMPLES OF VEHICLES INVOLVED IN TRAFFIC ACCIDENTS HANDLED:

- Automobiles; pick-up trucks; vans; utility vehicles; motorcycles; off-road motorbikes; bicycles.
- Tractor-trailers (articulated trucks - often "semi's"); (truck) tractors with semi-trailers and/or trailers.
- Large trucks: garbage trucks, coal trucks, dump trucks, tank trucks, etc; farm vehicles, including tractors.
- School buses; city buses; various cars in railroad trains including engines.

EXAMPLES OF ACTIVITIES PERFORMED FOR TRAFFIC ACCIDENTS HANDLED:

- Accident site inspection, measurement and photography; sight distance and nighttime visibility studies.
- Sight photogrammetry; graphical photogrammetry from photographs, manually or by computer.
- Inspection of damaged vehicles and vehicle components, including lamps and lamp filaments.
- Skid testing of vehicles and determination of "drag" factors.
- Evaluation of roadway and roadside surface condition: skidmarks, other tiremarks, gouges, debris.
- Evaluation of roadside and off-roadway conditions, including facilities (guardrails, etc.) and debris.
- Evaluation of vehicle damage, including evaluation of vehicle lamp and lamp filament condition.
- Evaluation of mechanical injuries to pedestrians, vehicle occupants and persons ejected from vehicles.
- Evaluation of roadway design and pre-accident condition (for safety) and traffic control devices, such as lane lines, warning and other signs, traffic control lights and other signals (particularly for suitability).
- Preparation of scale site drawings, and use of these in accident analysis and reconstruction.
- Determination of the movements (dynamics) of vehicles, vehicle occupants and pedestrians in relation to time, distance and to each other - before, during and after collision.
- Determination of braking, acceleration and maneuverability of vehicles.
- **Complete traffic accident reconstruction, manually or by computer, addressing required issues.**

EXAMPLES OF ISSUES ADDRESSED FOR TRAFFIC ACCIDENTS HANDLED:

- Speeds of vehicles at various points before and during an accident.
- Locations of vehicles, pedestrians, bicycles, etc., before and at various times during an accident.
- Sight distance, nighttime visibility and effect of weather on visibility.
- The relation of the condition of roadway facilities to an accident.
- The relation between the roadway design and traffic control devices and the accident.
- Answers to questions, such as:
  - Did vehicles stop at a stop sign or red light (traffic control) before collision?
  - Which vehicle was left of center first, and at collision?
  - Which vehicle occupant was driving when the accident occurred?
  - Were the headlights and/or other vehicle lights on at collision?
- **The accident causation, the relation of the accident factors to the accident causation and whether or not the accident could have been avoided or reduced in severity.**

MADDEN FORENSIC ENGINEERING
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August 9, 2002

JENNIFER R. GEORGE VS. GREGORY T. DILORETO
A TRAFFIC CRASH INVOLVING A PICKUP TRUCK AND A POLICE CRUISER

STATUS OF REPORT

The following report is a preliminary report. It may be augmented to include the results of additional analyses and/or to respond to additional evidence, including clarification of existing evidence. A supplementary report will be issued if such additional analyses and/or evidence warrants additions and/or changes to the material presented in the following report.

ACCIDENT DESCRIPTION

The subject traffic crash occurred on Friday, April 13, 2001 at about 2:37 a.m. in the city of Erie, Erie County, Pennsylvania. The subject traffic crash occurred in the intersection of Parade Street and the segment of East 14th Street extending to the east from Parade Street.

Prior to and at collision Jennifer R. George was making a left turn from southbound Parade Street to the eastside segment of eastbound East 14th Street in a red 1993 Chevrolet S-10 pickup truck. Prior to and at collision Gregory T. DiLoreto was driving northbound on Parade Street in a white 2000 Ford Crown Victoria police cruiser. On the date of the subject accident Mr. DiLoreto was a police officer for the city of Erie. He was on duty at the time of the crash. He was responding to a call at a high rate of speed without his siren on and without his warning lights on. Officer DiLoreto approached the accident site from south of the railroad underpass which is south of the intersection of Parade Street and East 15th Street.

The front of the police cruiser struck the right front corner and nearby areas of the pickup truck in the right northbound lane of Parade Street. The pickup truck was in its left turn when it was struck.

Both vehicles travelled north in the right northbound lane after the collision. The DiLoreto vehicle came to final rest primarily on the eastside sidewalk facing northeast. The George vehicle came to final rest in the right northbound lane facing largely west, having been rotated more than 180° from its original almost eastbound direction when struck. The left rear of the DiLoreto police cruiser was resting in the rear of the bed of the George pickup truck.

Mr. DiLoreto and Miss George were injured in the crash.

ACCIDENT CONDITIONS

The traffic crash occurred at nighttime. The area was illuminated with street lights (luminaires). There were no adverse weather conditions. The road surface was dry.

ROADWAY

Parade Street is a 2 way asphalt paved city street. In the accident area there are two travel lanes in each direction of travel on the roadway. The right lanes are also wide enough to allow parking on each side of the street. A left turn is allowed at the accident intersection from the left lane of southbound Parade Street into the eastside segment of eastbound East 14th Street. The left lane of Parade Street at the accident intersection serves as both a through lane and left turn lane. There is a traffic light for the accident intersection. There is no dedicated green light (green arrow) for the left turn from southbound Parade Street to eastbound East 14th Street.

The two travel lanes in each direction on Parade Street at the accident intersection are divided by dashed white lines. The southbound left lane is divided from the northbound left lane by solid double yellow lines. There are no lines between the travel areas and the adjoining parking areas of the right lanes. The parking area on each side of the street is bordered by a curb and a sidewalk. At places along Parade Street in the vicinity of the accident intersection there is also a grass strip or grass squares between the curb and the sidewalk.

At and near the accident intersection the left travel lanes range in width from approximately 10 feet 1 inch to 11 feet 11 inches. Each right travel lane combined with the adjacent parking area ranges in width from approximately 22 feet 1 inch to 23 feet 9 inches.

The section of East 14th Street east of Parade Street is one way eastbound. It is approximately 26 feet wide. East 14th Street east of Parade Street does not have lane stripes (painted lines on the pavement). The roadway on East 14th Street east of Parade Street is bordered by curbs, grass strips and sidewalks.

MATERIALS PROVIDED

Among the materials provided were the following:

- Commonwealth of Pennsylvania Police Crash Report, Incident Number 2001012476 (11 pages)

- Police scene sketch and measurements
- Planning maps for vicinity of accident
- Newspaper articles
- Color photographic "proofs" and color photographs of the accident scene
- Videotape
- Transcript of hearing on September 27, 2001 before District Justice Frank J. Abate, Jr.
- Transcript of Summary Appeal Proceeding on January 31, 2002 before the Honorable Stephanie Domitrovich

INSPECTION

I inspected the vehicles involved in the subject accident on May 22, 2001 and September 13, 2001. Measurements and photographs of the vehicles were taken during the inspections.

I inspected the accident site on May 22, 2001, July 7, 2001 and September 13, 2001. Visibility studies were conducted on the two earlier dates. Measurements of the accident area were taken on the two latter dates. Photographs of the accident site were taken on September 13, 2001.

DISCUSSION

During the investigation of the subject accident Gregory DiLoreto was interviewed by the investigating officer, Karl Kelm of the Erie Police Department. The interview occurred on the day of the accident after Officer Kelm had completed his accident scene investigation.

Officer Kelm testified in the September 27, 2001 hearing and the January 31, 2002 Summary Appeal in the case of the Commonwealth versus Gregory DiLoreto. Officer Kelm testified that Mr. DiLoreto stated to him (Officer Kelm) that at the time of the subject accident he (Mr. DiLoreto) was travelling from an alarm call at the Maennerchor Club to a fight call for the New York Lunch located at 10th and Parade Streets. This brought Mr. DiLoreto east on 16th Street to Parade Street and north on Parade Street prior to the subject accident.

Officer Kelm testified that Mr. DiLoreto stated to him that as he (Mr. DiLoreto) came up the incline on the north side of the railroad underpass (just south of East 15th Street) and broke the crest he saw headlights in his lane of traffic. Officer Kelm further testified that Mr. DiLoreto stated to him that when he (Mr. DiLoreto) realized that these headlights were not going away, but rather were coming further into his lane, he applied his brakes and started to swerve to the right. Mr. DiLoreto's vehicle left skid marks from the front tires. These were 72 feet and 69 feet in length. The skid marks extended to the impact with the George vehicle in its left turn into the eastside segment of East 14th Street.

Vehicular dynamics in conjunction with the scene data establishes that the headlights that Mr. DiLoreto reported observing in his lane of travel as he (Mr. DiLoreto) came up the incline on the north side of the railroad underpass and broke the crest were the headlights of the George vehicle in the early stages of its left turn. Vehicular dynamics in conjunction with the scene data establishes that Mr. DiLoreto would have observed these headlights as he first came into position to see vehicles at the intersection of Parade Street and the eastside segment of East 14th Street. Vehicular dynamics in conjunction with the scene data establishes that the George vehicle was already in its left turn into East 14th Street when Mr. DiLoreto's vehicle came up the incline and broke the crest so that Mr. DiLoreto could observe the George vehicle in its left turn. Vehicular dynamics in conjunction with the scene data establishes these facts independently and separately from Mr. DiLoreto's testimony.

The unobstructed view distance for Mr. DiLoreto to the accident intersection when he came up from the underpass under the railroad near East 15th Street was over 300 feet. Mr. DiLoreto first saw the headlights of the George vehicle when he was over 300 feet from the accident intersection. His vehicle was braked only for the last 72 feet of this over 300 feet of unobstructed view distance.

Mr. DiLoreto informed Officer Kelm that he was travelling 35 to 40 miles per hour before braking. None of the emergency equipment had been activated during the call to the New York Lunch. Neither the emergency light nor the emergency siren was in operation as Mr. DiLoreto travelled north on Parade Street to the collision.

The minimum speed of the DiLoreto vehicle was calculated at collision and at the start of the skid marks. The speed at collision was calculated using the transfer of momentum during the collision. This method is based on the principle of conservation of momentum in a collision. The post-collision speeds were determined from the dissipation of energy in the travel from the collision to final rest after collision. This method is based on the principle of conservation of energy.

The post-collision speed of the DiLoreto vehicle was determined to be approximately 30 miles per hour. The collision of the DiLoreto vehicle with the utility pole and the second collision of the DiLoreto vehicle with the George vehicle (to the rear of the George vehicle) were neglected in the

determination of the speed immediately after the collision with the George vehicle. The calculated speed leaving the collision between the vehicles with the subsequent collisions of the DiLoreto vehicle with the utility pole and the rear of the George vehicle included would be higher than 30 miles per hour. The calculated speeds at all positions previous to the collisions with the utility pole and the rear of the George vehicle would be higher for the DiLoreto vehicle if the energy dissipated in the collisions with the utility pole and the rear of the George vehicle had been included in the calculations.

The speed of the DiLoreto vehicle immediately before the collision with the George vehicle was determined to be more than 50 miles per hour. If the collisions of the DiLoreto vehicle with the utility pole and the rear of the George vehicle (toward the end of the accident events) had been included in the calculations the calculated speed of the DiLoreto vehicle immediately before the collision with the George vehicle would have been even higher than 50 miles per hour.

The DiLoreto vehicle had already been slowed significantly in its pre-impact skid. The speed of the DiLoreto vehicle just before the start of the skid mark was determined to be approximately 63 miles per hour. If the collisions of the DiLoreto vehicle with the utility pole and the rear of the George vehicle (toward the end of the accident events) had been included in the calculations the calculated speed of the DiLoreto vehicle just before the start of the skid mark would have been even higher than 63 miles per hour.

The speed before skidding was determined from the dissipation of energy in the skid down to the previously determined speed immediately before the collision with the George vehicle. The method used to determine the speed before starting skidding when a subsequent collision occurs before stopping is often called "combining" speeds. This is a technique that accounts for the square/square root relationship between energy and speed when dealing with energy dissipations and momentum transfer during different segments of a vehicle's travel path.

In the situation of the DiLoreto vehicle the segments of travel for calculation purposes were: (1) pre-collision skidding - evaluated through dissipation of energy; (2) collision with the George vehicle - evaluated by transfer of momentum during the collision; and (3) post-collision travel (after collision with the George vehicle) - evaluated by dissipation of energy in coming to final rest.

The George vehicle had two segments of travel to be evaluated: (1) collision - evaluated by momentum transfer during the collision; and (2) post-collision travel - evaluated by dissipation of energy in coming to final rest.

In the vehicular collision a portion of the higher pre-impact momentum of the DiLoreto vehicle was transferred to the George vehicle to increase the speed of the George vehicle during the collision. Momentum has direction; it is a vector. The direction of the George vehicle was dramatically

changed by the momentum transferred from the DiLoreto vehicle during the collision. As a result of the impact from the DiLoreto vehicle the George vehicle rotated over 180° and travelled north up Parade Street a significant distance.

The speed of the George vehicle just prior to being struck was approximately 11 miles per hour, with the George vehicle on a left turn path to enter the eastside segment of East 14th Street.

The pre-impact speed of the George vehicle is consistent with a vehicle which had started from a stop at the light at Parade Street and the eastside segment of East 14th Street.

The methods used to determine the speeds of the DiLoreto and George vehicles are generally accepted engineering methods for accident reconstruction. These methods are generally accepted as one approach for determining speeds of vehicles involved in collisions. The results from the use of these methods for calculation of the speeds when used with valid data are within a reasonable degree of engineering certainty. The results stated in this report for the subject accident are based on valid data and are within a reasonable degree of engineering certainty. All parameters were taken most favorably for the DiLoreto vehicle (this is often called a conservative analysis), thus leading to the lowest possible speeds for the DiLoreto vehicle.

As previously noted the speed of the DiLoreto vehicle is known just before the skid starts. This allows the determination of the position where Mr. DiLoreto responded to brake for the George vehicle. This establishes the total distance that the DiLoreto vehicle travelled during Mr. DiLoreto's response and the skidding. The DiLoreto vehicle travelled between approximately 69 and 92 feet during response, based on normal response times for unimpaired drivers. The DiLoreto vehicle travelled 69 to 72 feet (depending on which side of the vehicle is considered) during skidding. The total distance travelled during response and skidding was approximately 138 to 164 feet.

Using the response range for normal unimpaired drivers, it has been determined that the DiLoreto vehicle could have been braked to a stop without reaching the point of collision from approximately 43 miles per hour, with the start of response at the same position as on the night of the accident. This speed is significantly more than the speed limit of 25 miles per hour.

The DiLoreto vehicle could have been braked to a stop without reaching the point of collision from any speed less than approximately 43 miles per hour, with the start of response at the same position as on the night of the accident.

Mr. DiLoreto did not respond in a timely fashion to the George vehicle in a left turn. As previously noted Mr. DiLoreto responded to brake for the left turning George vehicle approximately 138 to 164 feet before collision. However, Mr. DiLoreto had over 300 feet in which to respond and brake to

avoid the subject collision. This distance is more than the distance required to completely stop from 65 miles per hour, which is a higher speed than the 63 miles per hour speed of the DiLoreto vehicle before it started to skid in the subject accident. At a speed of 65 miles per hour approximately 71 to 95 feet is required for a response distance for a normal unimpaired driver. Approximately 201 feet is required to skid to a stop from 65 miles per hour based on the accident parameters taken most favorably for the DiLoreto vehicle. The total distance required, approximately 272 to 296 feet, is less than the available (more than) 300 feet. The DiLoreto vehicle would have stopped before reaching the point of impact even at Mr. DiLoreto's excessive speed if Mr. DiLoreto had responded to brake when he first observed the George vehicle's lights in his lane. If Mr. DiLoreto had not delayed response on the night of the accident the accident would have been completely avoided even at his very excessive speed.

Analysis of the accident dynamics, in conjunction with the physical evidence establishes that when the lights of the George vehicle were in the northbound lane (those in which the DiLoreto vehicle was travelling) the George vehicle was already in a left turn. If Mr. DiLoreto had responded to the George vehicle in its left turn the accident would not have occurred; it would have been completely prevented. The view of each vehicle from the other is essentially the same in the pre-accident configuration of the travel of the two vehicles. Ms. George started the left turn when the DiLoreto vehicle was out of her sight in the underpass under the railroad.

It should be noted that the high speed of the DiLoreto vehicle significantly reduced the time available for the George vehicle to make its left turn. At 25 miles per hour, the speed limit, the DiLoreto vehicle would take 8.2 seconds to travel 300 feet. At the minimum actual speed of the DiLoreto vehicle, 63 miles per hour, the DiLoreto vehicle would take approximately 3.25 seconds to travel 300 feet if no braking had been involved. The additional time available for the George vehicle to complete its left turn would have been 4.95 seconds, with the DiLoreto vehicle travelling at the 25 miles per hour speed limit. The total time that the driver of the George vehicle would have had available if the DiLoreto vehicle had been travelling at the speed limit, 8.2 seconds, would have been significantly more than twice as much time as the driver of the George vehicle actually had available to make the left turn in the actual accident, 3.25 seconds. If the DiLoreto vehicle had been travelling at the speed limit or even a faster, up to 48 miles per hour, the George vehicle would have completely cleared the intersection without incident, without any reaction at all on the part of Mr. DiLoreto (no braking required), even if Mr. DiLoreto had pulled into the right northbound lane as he did in the actual accident.

As noted above, during the actual accident Mr. DiLoreto pulled to the right into the right northbound lane, tracking the George vehicle to the collision. Under controlled operation at the speed limit at the distance that Mr. DiLoreto reacted to the presence of the George vehicle it can be reasonably expected that Mr. DiLoreto would not have pulled to the right to track the George vehicle. This

should be true at speeds even higher than the speed limit considering the great distance at which Mr. DiLoreto could see the left-turning George vehicle. If Mr. DiLoreto had not pulled right his vehicle would have passed behind the George vehicle and there would have been no contact or accident up to a speed of the DiLoreto vehicle of 60 miles per hour. The DiLoreto vehicle, traveling at 60 miles per hour (or less) in the left northbound lane, would have passed behind the George vehicle without contact, without any reaction required from Mr. DiLoreto.

SUMMARY AND CONCLUSIONS

In summary the subject accident occurred during a left turn by Ms. George from southbound Parade Street into the eastside segment of East 14th Street. The collision occurred in the northbound lanes of Parade Street when the northbound DiLoreto vehicle struck the left turning George vehicle. Prior to braking the DiLoreto vehicle had been travelling approximately 63 miles per hour. The George vehicle was travelling at approximately 11 miles per hour at collision, consistent with starting from a stopped position when the traffic light turned green for its travel.

The George vehicle was in its left turn before the DiLoreto vehicle came into view for southbound traffic at East 14th Street. The George vehicle when first observed by Mr. DiLoreto was in its left turn. The DiLoreto vehicle had been out of sight in the underpass when Ms. George started her turn.

Mr. DiLoreto delayed responding to the left turning George vehicle. If he had not delayed responding he could have stopped from his speed of 63 miles per hour before he reached the George vehicle, completely avoiding the accident.

There were no sirens or emergency lights operating on the police cruiser being driven by Mr. DiLoreto (formerly Officer DiLoreto).

The DiLoreto vehicle could have been stopped without contacting the George vehicle from a speed of 43 miles per hour, 18 miles per hour over the speed limit, with a response to brake at the same place as Mr. DiLoreto responded to brake on the night of the accident. The subject accident would have been completely avoided under those conditions.

The DiLoreto vehicle would have passed behind the George vehicle without contact without any reaction on the part of Mr. DiLoreto (no braking required) at speeds of the DiLoreto vehicle up to 48 miles per hour with the DiLoreto vehicle pulled into the right northbound as in the actual accident. The subject accident would have been completely avoided under those conditions.

If the DiLoreto vehicle had stayed in the left northbound lane it would have passed the George vehicle without contact at speeds of the DiLoreto vehicle of up to 60 miles per hour without any reaction on the part of Mr. DiLoreto (no braking required). The subject accident would have also been completely avoided under those conditions.

The George vehicle was already in its left turn before the speeding DiLoreto vehicle came out of the railroad underpass south of East 15th Street. Ms. George could not have avoided the ensuing accident.

In conclusion the subject accident was caused by the speed of the DiLoreto vehicle and the delayed response of Mr. DiLoreto to the left turning George vehicle. If the DiLoreto vehicle had been travelling at a reasonable speed or if Mr. DiLoreto had responded reasonably to the left turning George vehicle the subject accident would not have occurred.

At the collision the George vehicle was in a left turn made legally and responsibly. Ms. George could not have avoided the accident caused by the speeding DiLoreto vehicle.

The foregoing is based on my education, training and experience, as well as my inspections and analysis of the evidence regarding the subject accident. The foregoing is to a reasonable degree of engineering certainty.

Respectfully submitted,

James D. Madden, P.E.
Licensed Professional Engineer